

CLAIMS

1 1. A computer implemented method for handling database requests for client systems over a
2 network, the method comprising:

3 receiving from a client a database request;

4 determining an assigned database server for handling the database request from a group
5 of available database servers;

6 prompting the assigned database server to load a database corresponding to the database
7 request;

8 providing the database request to the assigned database server for handling the database
9 request; and

10 providing a result of handling the database request to the client.

1 2. The method of claim 1, further comprising:

2 determining that the database request is a request to create a database;

3 generating a database identifier for the database; and

4 mapping the database to the assigned database server using the database identifier.

1 3. The method of claim 2, further comprising:

2 receiving a subsequent database request containing the database identifier;

3 using the database identifier to determine the assigned database server; and

4 providing the subsequent database request to the assigned database server for handling
5 the subsequent database request.

1 4. The method of claim 1, further comprising:

2 responsive to determining that there is no database server assigned to handle the database

3 request,

4 assigning a selected database server from the group of available database servers as the

5 assigned database server; and

6 updating a mapping of previously created databases to their respective database servers to

7 include the assignment of the selected database server to the database.

1 5. The method of claim 1, further comprising:

2 responsive to a failure in the handling of the database request by the assigned database

3 server,

4 assigning the database request to an alternative database server selected from the group of

5 available database servers; and

6 providing the database request to the alternative database server for handling the database

7 request.

1 6. The method of claim 1, further comprising:

2 responsive to an elapsed time for the handling of the database request by the assigned

3 database server exceeding a threshold,

4 instructing the assigned database server to terminate the handling of the database request;

5 assigning the database request to an alternative database server selected from the group

6 of available database servers; and

providing the database request to the alternative database server for handling the database request.

1 7. The method of claim 1, further comprising:

maintaining location information for a plurality of request making clients corresponding

to a particular database associated with the database request;

assigning the database request to an alternative database server selected from the group

of available database servers by analyzing the location information for the

plurality of request making clients; and

providing the database request to the alternative database server for handling the database

request.

8. The method of claim 7, wherein the alternative database server is assigned based upon a determination that a substantial number of the request making clients are located closer to the alternative database server than the assigned database server.

1 9. The method of claim 1, further comprising:

assigning the database request to an alternative database server selected from the group of available database servers, based upon a comparison of a first expected load on the assigned database server and a second expected load on the alternative database server.

/ 10. The method of claim 1, further comprising:

2 assigning the database request to an alternative database server selected from the group of
3 available database servers; and
4 providing the database request to the alternative database server for handling the database
5 request.

11. A system for handling database requests for client systems over a network, the system
comprising:

2 a request handling module, which receives from a client a database request;
3 a plurality of database servers, which receive and handle database requests; and
4 a master control module, in communication with the request handling module and the
5 plurality of database servers, which receives the database request, determines an
6 assigned database server from the plurality of database servers for handling the
7 database request, prompts the assigned database server to load a database
8 corresponding to the database request, whereby the database request is provided
9 to the assigned database server for handling and a result of handling the database
10 request is provided to the client.

12. The system of claim 11, wherein the master control module determines that the database
request is a request to create a database, generates a database identifier for the database, and
maps the database to the assigned database server using the database identifier.

13. The system of claim 12, wherein the master control module receives a subsequent
database request containing the database identifier, uses the database identifier to determine the

3 assigned database server, and provides the subsequent database request to the assigned database
4 server for handling the subsequent database request.

1 14. The system of claim 11, wherein the master control module responds to determining that
2 there is no database server assigned to handle the database request by assigning a selected
3 database server from the plurality of database servers as the assigned database server, and
4 updating a mapping of previously created databases to their respective database servers to
5 include the assignment of the selected database server to the database.

1 15. The system of claim 11, wherein the master control module responds to a failure in
2 handling the database request by the assigned database server by assigning the database request
3 to an alternative database server selected from the plurality of database servers, and identifying
4 the alternative database server to the request handler responsive to the database request.

1 16. The system of claim 11, wherein the master control module assigns the database request
2 to an alternative database server selected from the plurality of database servers, and identifies the
3 alternative database server to the request handler responsive to the database request.

1 17. The system of claim 11, wherein the request handler responds to an elapsed time for
2 handling the database request by the assigned database server exceeding a threshold by
3 instructing the assigned database server to terminate the handling of the database request, and
4 wherein the master control module then assigns the database request to an alternative database
5 server selected from the plurality of database servers.

1 18. The system of claim 11, wherein the master control module maintains location
2 information for a plurality of request making clients corresponding to a particular database
3 associated with the database request, and assigns the database request to an alternative database
4 server selected from the plurality of database servers by analyzing the location information for
5 the plurality of request making clients.

1 19. The system of claim 18, wherein the alternative database server is assigned based upon a
2 determination that a substantial number of the request making clients are located closer to the
3 alternative database server than the assigned database server.

1 20. The system of claim 11, wherein the master control module assigns the database request
2 to an alternative database server selected from the plurality of database servers, based upon a
3 comparison of a first expected load on the assigned database server and a second expected load
4 on the alternative database server.

1 21. A method for handling database requests for client systems over a network, the method
2 comprising:
3 communicating with a plurality of database servers that receive and handle database
4 requests;
5 assigning databases to the database servers, including an assignment of a previously
6 existing database to an assigned database server selected from the plurality of
7 database servers;

8 receiving a set of information about a database request from a request handler;
9 determining from the set of information that the assigned database server corresponds to
10 the database request; and
11 sending an identification of the assigned database server to the request handler.

1 22. The method of claim 21, wherein the set of information about the database request
2 includes a database identifier for the previously existing database, and the database identifier is
3 used to determine that the previously existing database corresponds to the assigned database
4 server.

1 23. The method of claim 21, further comprising:
2 responsive to determining that the previously existing database is not currently assigned
3 to a database server,
4 assigning a selected database server from the plurality of database servers as the assigned
5 database server; and
6 updating a mapping that correlates previously created databases to their respective
7 database servers to include the assignment of the selected database server to the
8 database identifier.

1 24. The method of claim 21, further comprising:
2 assigning the database request to an alternative database server selected from the plurality
3 of database servers, and identifying the alternative database server to the request
4 handler.

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- 1 25. The method of claim 21, further comprising:
 - 2 maintaining location information for a plurality of request making clients corresponding
 - 3 to the previously existing database; and
 - 4 assigning the database request to an alternative database server selected from the plurality
 - 5 of database servers by analyzing the location information for the plurality of
 - 6 request making clients.
- 1 26. The method of claim 25, wherein the alternative database server is assigned based upon a
- 2 determination that a substantial number of the plurality of request making clients are located
- 3 closer to the alternative database server than the assigned database server.
- 1 27. The method of claim 21, further comprising:
 - 2 assigning the database request to an alternative database server selected from the plurality
 - 3 of database servers, based upon a comparison of a first expected load on the
 - 4 assigned database server and a second expected load on the alternative database
 - 5 server.
- 1 28. An apparatus for handling database requests for client systems over a network, the
- 2 apparatus comprising:
 - 3 a database server managing module, for communicating with a plurality of database
 - 4 servers that receive and handle database requests, assigning databases to the
 - 5 database servers, including an assignment of a previously existing database to an

assigned database server selected from the plurality of database servers, and determining that an assigned database server corresponds to a database by examining a set of information about the database request; and a request handler communications module, for receiving the set of information about the database request from a request handler, and sending an identification of the assigned database server to the request handler.

29. The apparatus of claim 28, wherein the set of information about the database request includes a database identifier for the previously existing database, and the database identifier is used to determine that the previously existing database corresponds to the assigned database server.

30. The apparatus of claim 28, wherein the database server managing module responds to determining that the previously existing database is not currently assigned to a database server by assigning a selected database server from the plurality of database servers as the assigned database server, and updating a set of database identifiers that correlate previously created databases to their respective database servers to include the assignment of the selected database server to the database identifier.

1 31. The apparatus of claim 28, wherein the database server managing module assigns the
2 database request to an alternative database server selected from the plurality of database servers,
3 and identifies the alternative database server to the request handler.

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- 1 32. The apparatus of claim 28, further comprising:
 - 2 a database assignment module, in communication with the database server managing
 - 3 module, which maintains location information for a plurality of request making
 - 4 clients corresponding to a particular database, and assigns the database request to
 - 5 an alternative database server selected from the plurality of database servers by
 - 6 analyzing the location information for the plurality of request making clients.
- 1 33. The apparatus of claim 32, wherein the alternative database server is assigned based upon
- 2 a determination that a substantial number of the request making clients are located closer to the
- 3 alternative database server than the assigned database server.
- 1 34. The apparatus of claim 28, further comprising:
 - 2 a database assignment module, in communication with the database server managing
 - 3 module, which assigns the database request to an alternative database server
 - 4 selected from the plurality of database servers, based upon a comparison of a first
 - 5 expected load on the assigned database server and a second expected load on the
 - 6 alternative database server.
- 1 35. A computer program product, for handling database requests for client systems over a
- 2 network, the computer program product stored on a computer readable medium and adapted to
- 3 perform operations comprising:
 - 4 communicating with a plurality of database servers that receive and handle database

5 requests;

6 assigning databases to the database servers, including an assignment of a previously

7 existing database to an assigned database server selected from the plurality of

8 database servers;

9 receiving a set of information about a database request from a request handler;

10 determining from the set of information that the assigned database server corresponds to

11 the database request; and

12 sending an identification of the assigned database server to the request handler.

13 36. The computer program product of claim 35, wherein the set of information about the

14 database request includes a database identifier for the previously existing database, and the

15 database identifier is used to determine that the previously existing database corresponds to the

16 assigned database server.

17 37. The computer program product of claim 35, wherein the operations further comprise:

18 responsive to determining that the previously existing database is not currently assigned

19 to a database server,

20 assigning a selected database server from the plurality of database servers as the assigned

21 database server; and

22 updating a persistent set of database identifiers that correlate previously created databases

23 to their respective database servers to include the assignment of the selected

24 database server to the database identifier.

1 38. The computer program product of claim 35, wherein the operations further comprise:
2 assigning the database request to an alternative database server selected from the plurality
3 of database servers, and identifying the alternative database server to the request
4 handler.

1 39. The computer program product of claim 35, wherein the operations further comprise:
2 maintaining location information for a plurality of request making clients corresponding
3 to the previously existing database; and
4 assigning the database request to an alternative database server selected from the plurality
5 of database servers by analyzing the location information for the plurality of
6 request making clients.

1 40. The computer program product of claim 39, wherein the alternative database server is
2 assigned based upon a determination that a substantial number of the plurality of request making
3 clients are located closer to the alternative database server than the assigned database server.

1 41. The computer program product of claim 35, wherein the operations further comprise:
2 assigning the database request to an alternative database server selected from the plurality
3 of database servers, based upon a comparison of a first expected load on the
4 assigned database server and a second expected load on the alternative database
5 server.

1 42. The computer program product of claim 41, wherein the alternative database server is

2 assigned based upon a failure in handling the database request by the assigned database server.

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